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Tretolylea, a new genus from the Brazilian semiarid region

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Abstract — *Tretolylea pleiomorpha* gen. & sp. nov. is described and illustrated. It is characterized by inconspicuous prostrate (or decumbent) brown multi-branched conidiophores, tretic conidiogenous cells, blastocatenate cylindrical to oblong euseptate brown conidia, and a *Phialophora*-like synanamorph that arises from the same assimilative hyphae and conidia.

Key words — asexual fungi, sooty moulds, systematics, tropical fungi

Introduction

During investigations of microfungi on dead plant material in the semiarid region of northeast Brazil, an interesting fungus was collected on decaying wood of an unidentified plant. This fungus, which shows remarkable differences from all previously described genera (Seifert et al. 2011), is described as a new genus and species.

Materials & methods

Samples of decaying wood of unidentified woody plants were collected in small separate areas with typical vegetation of the semiarid region and placed in paper bags. In the laboratory the samples were placed in Petri dish moist chambers and stored in a polystyrene box with sterile water plus glycerol at 25°C for 30 days (Castañeda-Ruiz 2005). Mounts of slides were prepared in PVL (polyvinyl alcohol, lactic acid, and phenol), and micrographs were obtained with an Olympus microscope BX 51. The specimen is conserved in the Herbarium, Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, Brazil (HUEFS).

Taxonomy

Tretolylea Cantillo, R.F. Castañeda &. Gusmão, gen. nov.

MycoBank MB 812409

Differs from *Lylea* by its tretic conidiogenous cells and euseptate conidia.

Type species: *Tretolylea pleiomorpha* Cantillo et al.

Etymology: Greek *treto-* (τρητός) meaning pierced through, referring to the tretic conidiogenous cells, + *-lylea* referring to the hyphomycete genus *Lylea*.

Colonies on the natural substratum effuse, hairy, brown. Mycelium superficial, composed of smooth, septate, brown hyphae. Conidiophores inconspicuous, prostrate or decumbent, multi-septate, brown, resembling assimilative hyphae. Conidiogenous cells terminal, integrated or discrete, determinate and producing one conidium or extending sympodially and producing several conidia sequentially; conidial initiation tretic; conidial secession schizolytic. Conidia blastocatenate, cylindrical to oblong, phragmosporous, euseptate, brown, smooth. Synanamorph *Phialophora*-like arising from the same assimilative hyphae and conidia.

Tretolylea pleiomorpha Cantillo, R.F. Castañeda & Gusmão, sp. nov. Figs 1, 2

MycoBank MB 812410

Differs from *Lylea catenulata* by its tretic conidiogenous cells and euseptate conidia.

Type: Brazil, Rio Grande do Norte State: Portalegre, Chapada do Apodí, 6°01′S 37°59′W, 520 m alt., on decaying wood, 3.VIII.2014, coll: T. Cantillo (**Holotype**: HUEFS 211337).

Etymology: Greek, *pleio-* meaning more than usual, + *-morpha*, referring to existing forms of conidium ontogeny.

Colonies on the natural substrate effuse, funiculose, brown. Mycelium superficial, composed of branched, 6–11 µm wide, septate, smooth hyphae. Conidiophores inconspicuous. Conidiogenous cells discrete, cylindrical, determinate and producing one conidium or extending sympodially and producing several conidia sequentially; conidial initiation tretic; conidial secession schizolytic. Conidia blastocatenate, cylindrical to oblong, straight, somewhat curved or slightly, sinuate, rounded at the ends, brown, smooth, 2- to 11-euseptate, slightly darker at septa, 29–47 × 10–19 µm. Synanamorph *Phialophora*-like, conidiophores distinct, branched, conidiogenous cells forming a slightly penicillate cluster, lageniform, discrete, "phialidic" (i.e., producing conidia sequentially by a replacement wall-building apex system from a single fertile locus; Minter et al. 1983), sometimes extending by percurrent enteroblastic proliferation, pale brown, 8–16 × 6–8 µm, with a conspicuous, narrow collarette. Conidia globose, unicellular, subhyaline to pale brown or pale olivaceous-brown, smooth, 2–3 µm diam., accumulating in brown masses.

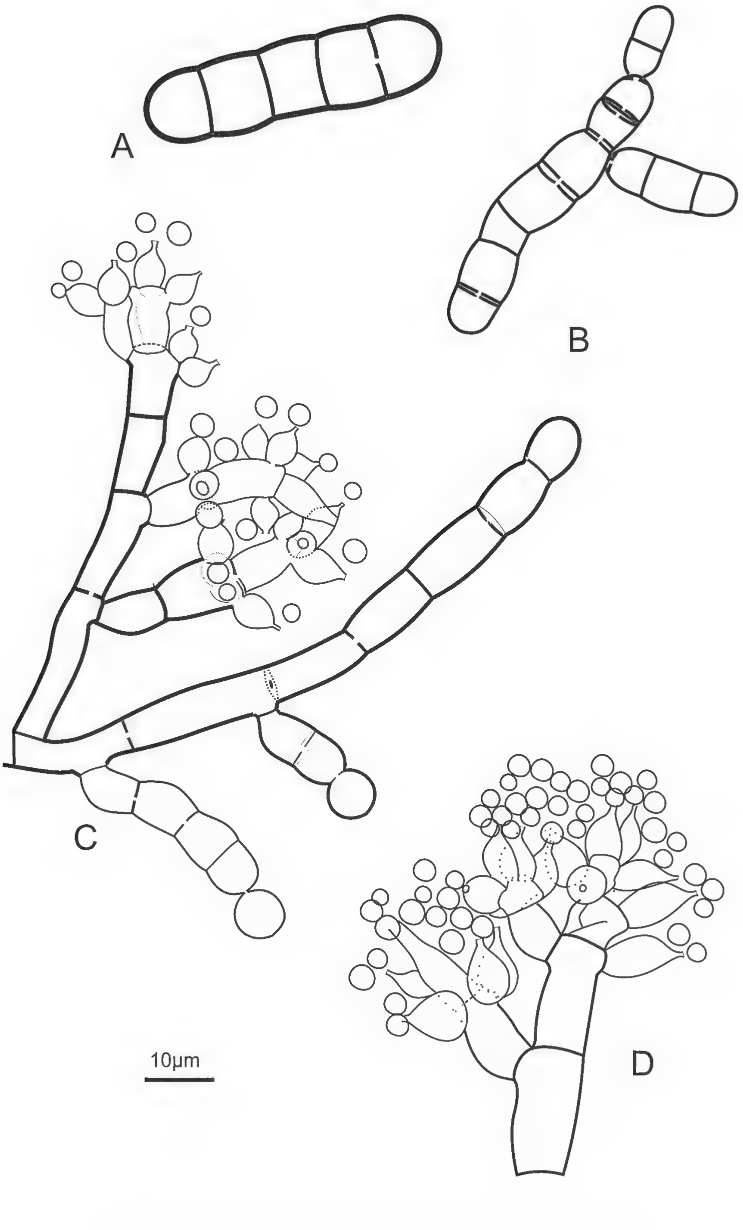

Fig. 1. *Tretolylea pleiomorpha* (holotype, HUEFS 211337).
A, B. Conidia. C. Conidiogenous cells and conidia.
D. Conidiogenous cell and conidia of *Phialophora*-like synanamorph.

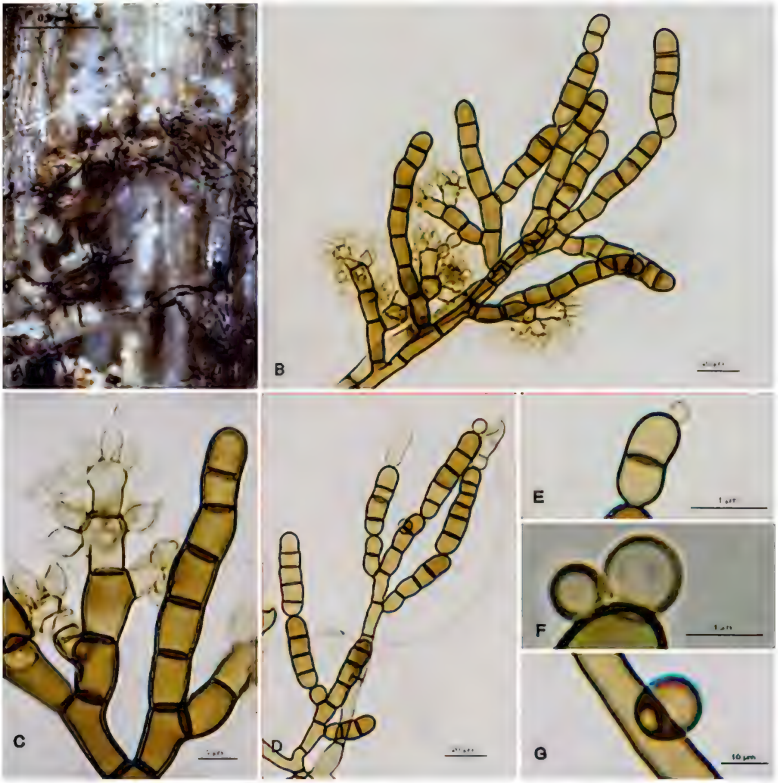

Fig. 2. *Tretolylea pleiomorpha* (holotype, HUEFS 211337). A. Colonies on the natural substratum. B, C. Conidiogenous cells and conidia. D. Conidiogenous cell and conidia. E. Conidial development. F, G. Conidiogenous cells.

Notes: *Lylea* Morgan-Jones superficially resembles *Tretolylea* but has holoblastic conidiogenous cells and distoseptate conidia (Morgan-Jones 1975). *Heteroconium* Petr. (Castañeda-Ruiz et al. 2008, Ma et al. 2012a,b, Ren et al. 2012), *Taeniolella* S. Hughes (Watanabe 1992), and *Taeniolina* M.B. Ellis (Seifert et al. 2011) are similar to *Tretolylea;* these genera produce conidia in unbranched or branched chains, but conidial development is holoblastic. The sooty moulds *Capnophialophora* S. Hughes and *Capnosporium* S. Hughes (Hughes 1976) also superficially resemble *Tretolylea,* but neither has tretic conidial development (Seifert et al. 2011).

This fungus was collected in the semiarid region of Brazil, also known as Caatinga. Caatinga ecosystems are unique to Brazil and are undoubtedly threatened, with only about 1% of the area having formal protection (www.nature.org/ourinitiatives/regions/southamerica/brazil/placesweprotect/caatinga.xml

— accessed 31 May 2015). The type locality is a small remaining fragment of natural or semi-natural vegetation surrounded by farming and other developments. The discovery of this new genus here (and of others already collected by the authors but as yet undescribed) suggests that the Caatinga may be as rich in fungi as in animals and plants, many of which are endemic. As a newly discovered species about which very little is known, the conservation status of *Tretolylea pleiomorpha* is Data Deficient, but if it is found to be an endemic of the region, it is will probably be categorized as threatened.

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Literature cited

Castañeda-Ruiz RF. 2005. Metodología en el estudio de los hongos anamorfos. 182–183, in: Anais do V Congresso Latino Americano de Micología, Brasilia.

Castañeda-Ruiz RF, Iturriaga T, Heredia G, Minter DW, Gené J, Stadler M, Saikawa M, Silvera-Simón C. 2008. Notes on *Heteroconium* and a new species from Venezuela. Mycotaxon. 105: 175–184.

Hughes SJ. 1976. Sooty moulds. Mycologia. 68: 693–820. http://dx.doi.org/10.2307/3758799

Ma J, Ma LG, Zhang YD, Castañeda-Ruiz RF, Zhang XG. 2012a. New species or records of *Endophragmiella* and *Heteroconium* from southern China. Cryptogamie Mycologie 33: 127–135. http://dx.doi.org/10.7872/crym.v33.iss2.2012.127

Ma J, Ma LG, Zhang YD, Castañeda-Ruiz RF, Zhang XG. 2012b. New species and records of *Heteroconium* (anamorphic fungi) from southern China. Mycoscience 53: 466–470. http://dx.doi.org/10.1007/S10267-012-0190-3

Minter DW, Sutton BC, Brady BL. 1983. What are phialides anyway? Transactions of the British Mycological Society 81: 109–120.

Morgan-Jones G. 1975. Notes on hyphomycetes. VIII. *Lylea*, a new genus. Mycotaxon 3: 129–132.

Ren SC, Ma J, Zhang XG. 2012. Two new *Heteroconium* species and two other forest microfungi newly recorded from China. Mycotaxon 119: 361–367. http://dx.doi.org/10.5248/119.361

Seifert K, Morgan-Jones G, Gams W, Kendrick B. 2011. The genera of hyphomycetes. CBS Biodiversity Series 9. 997 p. http://dx.doi.org/10.3767/003158511X617435

Watanabe T. 1992. *Taeniolella phialosperma* sp. nov. from Japan. Mycologia 84: 478–483. http://dx.doi.org/10.2307/3760204